WHAT IS CLAIMED IS:

1. An automatic power controller, which automatically controls an output power of a laser light source in an optical disk drive, the automatic power controller comprising:

a photo detector for detecting the output power of the laser light source and generating a detection signal;

a first signal source for providing a reference signal having different voltage values representing different output power levels of the laser light source;

a comparator having a capacitor for comparing the detection signal with the reference signal and outputting a comparison signal depending on the voltage across the capacitor;

a voltage adjusting unit for generating an output signal according to the comparison signal; and

a drive unit for receiving the output signal of the gain-adjustable amplifier and generating a drive signal for driving the laser light source;

wherein the voltage adjusting unit is employed such that the voltage across the capacitor is kept substantially unchanged regardless of the output power level of the laser light source.

2. The automatic power controller according to claim 1, further comprising a front amplifier disposed between the photo detector and the comparator for amplifying the detection signal.

3. The automatic power controller according to claim 1, wherein the first signal source is a digital-to-analog converter.

4. The automatic power controller according to claim 1, wherein the comparator further comprises:

an OP amplifier having a first input terminal, a second input terminal and an output terminal for receiving the detection signal and the reference signal, respectively, and outputting the comparison signal; and

a first resistor coupled between the photo detector and the first input terminal of the OP amplifier.

5. The automatic power controller according to claim 4, wherein the capacitor coupled between the first input terminal of the OP amplifier and the output terminal of the OP amplifier.

6. The automatic power controller according to claim 1, wherein the comparator further comprises

a gm-C integrator having a first input terminal, a second input terminal and an output terminal and an input terminal for receiving the detection signal and the reference signal, respectively, and outputting the comparison signal.

7. The automatic power controller according to claim 6, wherein the capacitor coupled between the output terminal of the gm-C integrator and the ground.

8. The automatic power controller according to claim 1, wherein the voltage adjusting unit is a gain-adjustable amplifier for amplifying the comparison

signal with different gains at different output power levels of the laser light source.

9. The automatic power controller according to claim 1, wherein the voltage adjusting unit comprises:

a second signal source for providing an offset signal with different voltage at different output power levels of the laser light source; and

an adder for adding the comparison signal and the offset signal and generating an output signal.